

CLAIMS

- [1] A combustion exhaust gas processing device comprising:
- a dust collector collecting dust in combustion exhaust gas without adding active carbon;
 - a wet dust collector collecting water soluble components and dust in the combustion exhaust gas passed through the dust collector; and
 - a catalyst tower decomposing and removing NO_x and dioxins in the combustion exhaust gas passed through the wet dust collector.
- [2] The combustion exhaust gas processing device as claimed in claim 1, further comprising a reheater heating the combustion exhaust gas discharged from the wet dust collector at a front stage of the catalyst tower.
- [3] The combustion exhaust gas processing device as claimed in claim 1 or 2, further comprising an oxidizer adding device adding an oxidizer to the combustion exhaust gas passed through the dust collector.
- [4] The combustion exhaust gas processing device as claimed in claim 1, 2 or 3, further comprising a solid/liquid separator separating slurry discharged from the wet dust collector into solid and liquid phases, and a mercury adsorbing tower adsorbing mercury in liquid separated in the solid/liquid separator.
- [5] The combustion exhaust gas processing device as claimed in one of claims 1 to 4, further comprising a heat recovering device, at a rear stage of the catalyst tower, heating gas supplied from the reheater with the combustion exhaust gas discharged from the catalyst tower.
- [6] The combustion exhaust gas processing device as claimed in claim 3, 4 or 5, wherein said oxidizer includes hypochlorous acid soda and/or ozone.
- [7] The combustion exhaust gas processing device as claimed in one of claims 1

to 6, wherein said wet dust collector is a mixing scrubber.

[8] The combustion exhaust gas processing device as claimed in one of claims 1 to 7, wherein said combustion exhaust gas is exhausted from a cement kiln.

[9] A method of processing a combustion exhaust gas comprising the steps of:
collecting dust in combustion exhaust gas without adding active carbon;
collecting water soluble components and dust in the combustion exhaust gas through wet process; and
decomposing and removing NO_x and dioxins in the combustion exhaust gas after said wet dust collection by using catalyst.

[10] The method of processing a combustion exhaust gas as claimed in claim 9, further comprising the step of heating the combustion exhaust gas before decomposing and removing NO_x and dioxins in the combustion exhaust gas by using catalyst.

[11] The method of processing a combustion exhaust gas as claimed in claim 9 or 10, further comprising the step of adding an oxidizer to the combustion exhaust gas after the dust collection.

[12] The method of processing a combustion exhaust gas as claimed in claim 9, 10 or 11, further comprising the step of solid/liquid separating the slurry generated by the wet dust collection, and adsorbing mercury in liquid separated in the solid/liquid separation.

[13] The method of processing a combustion exhaust gas as claimed in one of claims 9 to 12, wherein stay time of said exhaust gas in the wet dust collector is more or equal to 1 second, and less or equal to 10 seconds.

[14] The method of processing a combustion exhaust gas as claimed in claim 11, 12 or 13, wherein said oxidizer includes hypochlorous acid soda and/or ozone.

[15] The method of processing a combustion exhaust gas as claimed in one of claims 9 to 14, wherein said combustion exhaust gas is exhausted from a cement kiln.

STATEMENT REFERRED TO IN ARTICLE 19

In Claim 1, it is clarified that a dust collector collects dust in combustion exhaust gas without adding active carbon, and in a catalyst tower, NOx and dioxins in combustion exhaust gas passed through a wet dust collector are decomposed.

In the first cited document (JP7-204604A), it is indispensable to add active carbon in a dust collector, but, with the invention claimed in claim 1, without active carbon, harmful substances such as dioxins can be removed. In addition, in the first cited document, only NOx is removed in a catalyst tower, but with the invention of Claim 1, NOx and dioxins can be removed.

Further, In Claim9 also, for the same reason described above, it is clarified that with a method according to the invention of Claim 9, without adding active carbon, dust in combustion exhaust gas is collected, and NOx and dioxins in the combustion exhaust gas after wet dust collection are decomposed and removed with catalyst.